



SCOTTISHPOWER
RENEWABLES

East Anglia ONE North and East Anglia TWO Offshore Windfarms

Applicants' Comments on The Wildlife Trusts' Deadline 4 Submissions

Applicant: East Anglia TWO and East Anglia ONE North Limited

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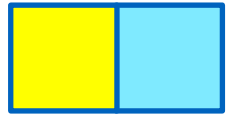
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Applicable to **East Anglia ONE North** and **East Anglia TWO**



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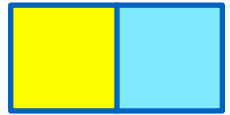
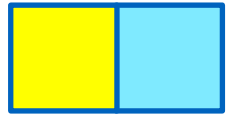


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Glossary of Acronyms

APP	Application Document
CFWG	Commercial Fisheries Working Group
DCO	Development Consent Order
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
ES	Environmental Statement
HRA	Habitats Regulation Assessment
IPMP	In-Principle Monitoring Plan
LAT	Lowest Astronomical Tide
MCA	Maritime and Coastguard Agency
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
OOOMP	Outline Operations and Maintenance Plan
RR	Relevant Representation
SAC	Special Area of Conservation
SIP	Site Integrity Plan
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNS	Southern North Sea
UXO	Unexploded Ordnance



Glossary of Terminology

Applicant	East Anglia ONE North Limited / East Anglia TWO Limited
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia ONE North / East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Generation Deemed Marine Licence (DML)	The deemed marine licence in respect of the generation assets set out within Schedule 13 of the draft DCO.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
HDD temporary working area	Temporary compounds which will contain laydown, storage and work areas for HDD drilling works.
Inter-array cables	Offshore cables which link the wind turbines to each other and the offshore electrical platforms, these cables will include fibre optic cables.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Meteorological mast	An offshore structure which contains meteorological instruments used for wind data acquisition.
Marking buoys	Buoys to delineate spatial features / restrictions within the offshore development area.
Monitoring buoys	Buoys to monitor <i>in situ</i> condition within the windfarm, for example wave and metocean conditions.
Offshore cable corridor	This is the area which will contain the offshore export cables between offshore electrical platforms and landfall.
Offshore development area	The East Anglia ONE North / East Anglia TWO windfarm site and offshore cable corridor (up to Mean High Water Springs).
Offshore electrical infrastructure	The transmission assets required to export generated electricity to shore. This includes inter-array cables from the wind turbines to the offshore electrical platforms, offshore electrical platforms, platform link cables and export cables from the offshore electrical platforms to the landfall.



Offshore electrical platform	A fixed structure located within the windfarm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore.
Offshore export cables	The cables which would bring electricity from the offshore electrical platforms to the landfall. These cables will include fibre optic cables.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Offshore platform	A collective term for the construction, operation and maintenance platform and the offshore electrical platforms.
Platform link cable	Electrical cable which links one or more offshore platforms. These cables will include fibre optic cables.
Safety zones	A marine area declared for the purposes of safety around a renewable energy installation or works / construction area under the Energy Act 2004.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water.
Transmission DML	The deemed marine licence in respect of the transmission assets set out within Schedule 14 of the draft DCO.



1 Introduction

1. This document is applicable to both the East Anglia ONE North and East Anglia TWO applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's (ExA) procedural decisions on document management of 23rd December 2019. Whilst for completeness of the record this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it again for the other project.
2. This document presents the Applicants' comments on The Wildlife Trusts' (TWT) Deadline 4 submission (REP4-125).



Point	TWT Comment	Applicants' Response
Appendix A – TWT Comments on the updated Draft Marine Mammal Mitigation Protocol [REP3-042]		
001	<p>Section 1 - Introduction</p> <p>Paragraph 6</p> <p>TWT welcome engagement by the applicant on the development of the SIP and being named as a consultee within the document. We look forward to our continued engagement with the applicant on this matter.</p>	Noted
002	<p>Paragraph 8</p> <p>The applicant has stated that the <i>“final MMMP for UXO clearance will be submitted to the MMO at least three months prior to UXO clearance activities being undertaken, for approval in consultation with the relevant SNCB”</i>. TWT would like to enquire as to the reasoning behind this change.</p>	The Applicants included this text to confirm the timescale for submission of the MMMP for UXO clearance however, it should be noted that the Applicants have discussed submission timescales with the MMO and have updated condition 16 of the Generation DML and condition 12 of the Transmission DML to reflect amended timescales for submission of the documents associated with UXO Clearance, as agreed with the MMO through a Statement of Common Ground meeting held on 26 th January 2020.
003	<p>Section 4 – East Anglia ONE North Commitments</p> <p>The applicant has revised the project commitments to include the phrase <i>“(at source)”</i>. This inclusion does not change our concerns on the revised project commitments (concerning the scheduling of UXO clearance and piling) as the project alone impacts on site integrity will still be dependent on commitments to mitigation and full assessments of mitigation effectiveness that would not occur until post-consent.</p> <p>For further detail on these concerns, please see TWT’s Comments on the updated In-Principle Site Integrity Plan [REP3-044] in Appendix B.</p>	See the Applicants response to Points 003 to 006 of Table 1 in the Applicants’ Comments on TWT Deadline 3 Submissions (REP4-020).
004	<p>Section 5 – Draft Protocols for UXO Clearance and Piling</p>	Noted



Point	TWT Comment	Applicants' Response
	Paragraph 33 TWT defers to Natural England's advice regarding the clustering of UXOs.	
005	Appendix 1 – Effectiveness of Possible Mitigation Measures TWT welcomes the inclusion of the Appendix to discuss the effectiveness of possible mitigation measures for UXO clearance and piling activities.	Noted
006	Paragraph 6 TWT welcomes that discussion of mitigation has been based on the worst case maximum predicted impact ranges as opposed to the 5km disturbance impact range.	Noted
007	Paragraph 8 Regarding Acoustic Deterrent Devices (ADDs), TWT would like to highlight that there is some evidence to say ADDs are effective at significant distances (greater than the largest maximum impact range of 11.1km stated in paragraph 7), such as up to 12km in Dähne <i>et al.</i> (2017) ¹ , and up to 15km in Brandt <i>et al.</i> (2013) ² . However, a great deal more work is required to understand the effectiveness of current mitigation for UXO clearance and to develop better options if the	An updated review of ADD effectiveness will be undertaken at the time of finalising the MMMP (including a review of the two referred to papers) to include any new research and information on the range and level of their effectiveness for marine mammal species, and to ensure the most appropriate ADD is used within the mitigations. Regarding charge weights potentially greater than 700kg, Ordtek (2018) ³ notes that German High Explosive bombs, torpedoes and depth charges represent a lower residual background threat. Based on this and the other

¹ Dähne, M., Tougaard, J., Carstensen, J., Rose, A., and Nabe-Nielsen, J. (2017). Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. *Marine Ecology Progress Series*, 580:221-237.

² Brandt, M. J., Hoeschle, C., Diederichs, A., Betke, K., Matuschek, R., Witte, S., and Nehls, G. (2013). Far-reaching effects of a seal scarer on harbour porpoises, *Phocoena phocoena*. *Aquatic Conservation-Marine and Freshwater Ecosystems* 23:222-232.

³ Ordtek (2018) Technical Note 01 Strategic Unexploded Ordnance (UXO) Risk Management – Seabed Effects During Explosive Ordnance Disposal (EOD) Available from <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-001533-Appendix%2005.02%20Norfolk%20Vanguard%20Detonation%20Effects%20of%20UXO.pdf>



Point	TWT Comment	Applicants' Response
	<p>current mitigation is found to be inadequate. TWT suggests that monitoring is undertaken if ADDs are used, in order to confirm their effectiveness.</p> <p>TWT welcomes the explanation behind the choice of 700kg as the UXO possible maximum charge weight, though we would like to highlight that other offshore wind farms such as Hornsea Two have chosen to include up to 800kg in their MMMPs as a worst case scenario, due to the potential of encountering German ground mines. Is the applicant certain that they will not need to carry out UXO detonations of this magnitude?</p>	<p>information provided within Ordtek (2018), the Applicants consider that a maximum Net Explosive Quantity of 700kg is a reasonable maximum metric on which to base the assessments.</p>
008	<p>Paragraph 13</p> <p>TWT welcomes the consideration of noise mitigation measures for UXO clearance, such as low order deflagration and the use of bubble curtains. TWT would like to highlight that recent studies on low order deflagration have detailed the effectiveness of this technique⁴ and we would ask low order to be prioritised over high order wherever possible. TWT feel that bubble curtains should be a standard condition when obtaining a licence for high order UXO clearance and we have stated this across multiple projects. However, bubble curtains are generally not necessary for undertaking low order UXO clearance.</p> <p>In addition, TWT requests that the UXO specific MMMP (and SIP) contain a full exploration of alternative options, such as leaving the UXO in situ (through avoidance / micro siting) or removing UXO from the site. The possibility of using either technique should be explored</p>	<p>The Applicants will continue engagement post-consent with TWT, Natural England and the MMO on the mitigation measures or alternative options to be implemented to minimise the potential impacts of underwater noise from UXO clearance activities and to ensure that the measures implemented are proportionate to the weight of the charge.</p> <p>Regarding conditioning of bubble curtains for high order UXO clearance, the Applicants do not consider this to be appropriate because in some circumstances bubble curtains cannot be used i.e. because their use is dependent on factors such as water depth / tidal flow.</p>

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/893773/NPL_2020_-_Characterisation_of_Acoustic_Fields_Generated_by_UXO_Removal.pdf



Point	TWT Comment	Applicants' Response
	and in the event they are discounted, justification of this choice should be provided.	
009	<p>Paragraph 14</p> <p>Please refer to our comments on paragraph 8 for our views on ADDs and Appendix B for our concerns on the scheduling of UXO clearance and piling.</p> <p>TWT would like to highlight that the precautionary swimming speeds mentioned in this paragraph do not match the new rounded-up figures in the main report (Paragraph 47).</p>	<p>See the Applicants' response to Point 007 regarding ADDs and Point 013 regarding scheduling of UXO clearance and piling.</p> <p>The precautionary swim speed for marine mammals included throughout both MMMPs (REP3-043) is 1.8m/s. However, following comments raised by Natural England regarding the update to the swimming speed, the Applicants intend to revert the swimming speed assumption to 1.5m/s and will therefore be resubmitting the MMMP at Deadline 6 to reflect this.</p>
010	<p>Paragraph 15</p> <p>TWT would like to enquire into the nature of the acoustic monitoring for East Anglia ONE, was PAM used only at the noise source or was this spread throughout the site?</p>	<p>The Applicants understand from East Anglia ONE that the acoustic processing and modelling reports are currently being finalised and TWT will be invited to comment and input on the work prior to publishing in late Q1 2021.</p> <p>Passive Acoustic Monitoring (PAM) was undertaken at several sites within and outside of the array site.</p>
Appendix B – TWT Comments on the updated In-Principle Site Integrity Plan [REP3-044]		
011	<p>Section 1 – Introduction</p> <p>Paragraph 22</p> <p>The applicant has stated that the <i>“final detailed SIP for UXO clearance activities will be produced at least three months prior to UXO clearance activities being undertaken, following revision and consultation”</i>. TWT would like to enquire as to the reasoning behind this change.</p>	See the Applicants' response to Point 002 of this table.
012	Section 2 - Consultation	Noted



Point	TWT Comment	Applicants' Response
	<p>Table 2.2</p> <p>TWT welcome engagement by the applicant on the development of the SIP and being named as a consultee within the document. We look forward to our continued engagement with the applicant on this matter.</p>	
013	<p>Section 4 – Project Description</p> <p>4.1. East Anglia ONE North Commitments</p> <p>As stated in our summary of oral submissions made at Issue Specific Hearing 1 and our comments on the Addendum for Marine Mammals [REP1-038] submitted at Deadline 3, TWT have some concerns with the revised project commitments related to the scheduling of UXO clearance and piling. As these revised commitments have not changed, our concerns remain the same. [Paragraphs below extracted from TWT's Deadline 3 response [REP3-148]].</p> <p>Although the SIP mechanism is still fairly new, SIPs have traditionally only been used for managing in-combination impacts. Providing a more detailed plan post-consent for in-combination noise impacts benefits both the developer and the regulator as this allows the provision of an up-to-date cumulative baseline to be included in the noise management plan and reduces the risks for both parties that arise from the long lead in time for offshore wind farm developments.</p> <p>TWT only support the SIP mechanisms for in-combination impacts and we believe that SIPs should not be used to manage project-alone impacts. The purpose of the SIP is to guard against the risks associated with long term planning where there is a significant unknown factor (up-to-date cumulative noise baseline) that lies outside of the project's control.</p>	<p>See the Applicants response to Points 003 to 006 of Table 1 in the <i>Applicants' Comments on TWT Deadline 3 Submissions</i> (REP4-125).</p>



Point	TWT Comment	Applicants' Response
	<p>However, in this case the results of the assessment have already shown that the project-alone impact(s) in question (more than one UXO detonation / more than one piling event / at least one UXO event and at least one piling event in a 24 hour period) would cause significant noise disturbance within the Southern North Sea SAC by exceeding the 20% daily threshold⁵.</p> <p>We feel that project-alone impacts should be conditioned as part of the Development Consent Order (DCO) and it would not be appropriate to include commitments within the DCO that are conditioned by mitigation that will not be committed to until post-consent.</p> <p>It is our view that adapting the SIP to include project-alone impacts would entail a significant change to the purpose of the document. In this case discussions would need to be held between stakeholders in the industry to agree on the purpose of the Site Integrity Plan and the role the mechanism serves in managing underwater noise impacts.</p>	
Section 6 – In Principle Management and Mitigation Measures		
014	<p>Paragraph 82</p> <p>TWT welcomes the consideration of noise mitigation measures for UXO clearance, such as low order deflagration and the use of bubble curtains. TWT would like to highlight that recent studies on low order deflagration have detailed the effectiveness of this technique and we feel that bubble curtains should be a standard condition when obtaining a licence for high order UXO clearance. However, bubble curtains are generally not necessary for undertaking low order UXO clearance.</p>	See the Applicants' response to Point 008 of this table.

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889842/SACNoiseGuidanceJune2020.pdf



Point	TWT Comment	Applicants' Response
	In addition, TWT requests that the UXO specific SIP contains a full exploration of alternative options, such as leaving the UXO in situ (through avoidance / micro siting) or removing UXO from the site. The possibility of using either technique should be explored and in the event they are discounted, justification of this choice should be provided.	
015	6.4 Measure 4: Clustering of UXO Devices TWT defers to Natural England's advice regarding the clustering of UXOs.	Noted
016	Additional notes TWT still abides by our comments submitted at Deadline 3 regarding the need for a regulatory mechanism for managing the in-combination impacts from multiple SIPs. However we appreciate that the development of the regulatory mechanism lies outside of the control of this examination.	No further comment.